# CONTENTS OF VOLUME XXV.

## CXXXVI. JULY, 1907.

**The Melting Points of Rhodium and Iridium, and the Use of the Nernst Glower in High Temperature Measurements.** C. E. MENDENHALL AND L. R. INGERSOLL . . . . . 1

**Mercurous Sulphate, Cadmium Sulphate and the Cadmium Cell.** G. A. HULETT . . . . . 16

**Crystal Rectifiers for Electric Currents and Electric Oscillations. Part I. Carborundum.** GEORGE W. PIERCE . . . . . 31

**Theory of Control of the Alternating Current Galvanometer.** A. H. TAYLOR . 61

**The Extra-transmission of Electric Waves.** W. B. CARTMEL . . . . . 64

**Proceedings of the American Physical Society.** The Relation between Luminosity and Electrical Conductivity of Flames, *F. L. Tufts;* The Effect of Frequency upon the Capacity of Absolute Condensers, *J. G. Coffin;* The Variations of Resistances with Atmospheric Humidity, *E. B. Rosa* and *H. D. Babcock;* The Simultaneous Measurement of the Capacity and Power Factor of Condensers, *Frederick W. Grover;* An Exact Formula for the Mutual Inductance of Coaxial Solenoids, *Louis Cohen;* A New Method for the Absolute Measurement of Inductance, *E. B. Rosa* . . . . . 70

## CXXXVII. AUGUST, 1907.

**Fatigue and Recovery of the Photo-electric Current.** W. H. HOLMAN . . . . 81

**Coefficient of Linear Expansion at Low Temperatures.** HERBERT G. DORSEY. 88

**The Effect of Temperature upon the Discharge of Electricity from Metals Illuminated by Ultra-violet Light.** GEORGE WINCHESTER . . . . . 103

**Temperature Control of the Cheltenham Magnetic Observatory U. S. Coast and Geodetic Survey.** J. E. BURBANK . . . . . 115

**The Effect of Frequency upon the Capacity of Absolute Condensers.** J. G. COFFIN. . . . . 123

**American Physical Society.** Influence of Atomic Weight upon the Maxima of Absorption and Reflection Bands, *W. W. Coblentz;* An Accurate Calorimeter, *Walter P. White;* On the Measurement of the Intensity and Damping of Hertzian Waves in Air, *Walter P. White;* The Effect of the Time of Passage of a Quantity of Electricity on the Throw of a Ballistic Galvanometer, *F. Wenner;* A Redetermination of the Wave-lengths of the Iron Lines, *A. H. Pfund;* Finding Direction by Means of Submarine Sound Signals, *Lucien Ira Blake;* The Influence of Frequency on the Resistance and Inductance by Coils, *Louis Cohen* 136

## CXXXVIII. SEPTEMBER, 1907.

**Heat of Evaporation of Water.** ARTHUR W. SMITH . . . . . 145

**Specific Heat of Solutions. V.** WILLIAM F. MAGIE . . . . . 171

**Inductance of Straight Conductor.** K. OGURA AND C. P. STEINMETZ . . . . . 184

**A Study of the Propagation and Interception of Energy in Wireless Telegraphy. Part I.** CHARLES A. CULVER . . . . . 200

**New Books:** *Gerhard*, Electricity Meters: their Construction and Management; *Heyland*, Graphical Treatment of Induction Motors . . . . . 224

303511

CXXXIX. OCTOBER, 1907.

**The Influence of Molecular Structure upon the Internal Friction of Certain Isomeric Ether Gases.** FREDERICK M. PEDERSEN . . . . . 225
**The Distribution of Energy Emitted by a Righi Vibrator.** C. R. FOUNTAIN AND F. C. BLAKE . . . . . 255
**A Study of the Reversible Pendulum. Part I. Theoretical Considerations.** JOHN C. SHEDD AND JAMES A. BIRCHBY . . . . . 274
**Measurement of Electrolytic Resistance.** W. S. FRANKLIN AND L. A. FREUDENBERGER . . . . . 294
**New Books:** *Schuster*, The Theory of Optics; *Drude*, Lehrbuch der Optik; *Wood*, Physical Optics . . . . . 303

CXL. NOVEMBER, 1907.

**The Discharge of Electricity from Pointed Conductors Differing in Size.** JOHN ZELENY . . . . . 305
**Potentiometer Installation. Especially for High Temperature and Thermo-electric Work.** WALTER P. WHITE . . . . . 334
**The Thermo-electric Behavior of Metals in Solutions of their Own Salts. II. Cadmium Amalgam in a Solution of Cadmium Sulphate.** WILLIAM D. HENDERSON . . . . . 353
**Studies in Luminescence. VIII. The Influence of the Red and Infra-red Rays upon the Photoluminescence of Sidot Blende.** EDWARD L. NICHOLS AND ERNEST MERRITT . . . . . 362
**Some Electrical Properties of Silicon. I. Thermo electric Behavior.** FRANCES G. WICK . . . . . 382
**Condensation Nuclei Obtained from the Evaporation of Fog Particles.** C. BARUS . . . . . 391
**The Diurnal Variation of the Spontaneous Ionization in Air in Closed Metallic Vessels.** T. FREDERICK MCKEON . . . . . 399
**The Absorption of Hydrogen by Metallic Films.** WILL C. BAKER . . . . . 422
**Some Physical Properties of Current Bearing Matter. IV. Friction.** PAUL R. HEYL . . . . . 429

CXLI. DECEMBER, 1907.

**Spectrophotometry of Normal and Color-blind Eyes.** F. L. TUFTS . . . . . 433
**General Law for Vapor Preesures. II.** SANFORD A. MOSS . . . . . 453
**On the Density, Electrical Conductivity, and Viscosity of Fused Salts and their Mixtures. I.** H. M. GOODWIN AND R. D. MAILEY . . . . . 469
**The Vapor Pressure of Carbonic Acid.** JOHN ZELENY . . . . . 490
**A Transportable Form of Standard Cell.** RALPH E. DELURY . . . . . 492
**A Device for Preventing Bumping in the Mercury Air Pump.** RALPH E. DELURY . . . . . 495
**American Physical Society.** Minutes of the Thirty-eighth Meeting. Results of Careful Weighings of a Magnet in Various Magnetic Fields, *L. A. Bauer;* The Selective Reflection Characteristic of Salts of Carbonic and other Oxygen Acids, *L. B. Morse;* The Variation of the Light Sensitiveness of the Selenium Cell with Pressure, *F. C. Brown* and *J. Stebbins;* The Recovery of Selenium Cells after Exposure to Light, *E. Merritt;* The Effect of Radium on the Resistance of Selenium Cells, *F. C. Brown* and *J. Stebbins* . . . . . 497
**Index** . . . . . 507